

MICROTUBULAR STRUCTURED SCAFFOLDS FOR TESTICULAR TISSUE ENGINEERING

*A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF*

MASTER OF TECHNOLOGY

in

BIOTECHNOLOGY

by

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CERTIFICATE

Dated

This is to certify that the work in the thesis entitled “**MICROTUBULAR STRUCTURED SCAFFOLDS FOR TESTICULAR TISSUE ENGINEERING**” submitted by **Mr. Gokula Nathan K (213BM2025)**, in partial fulfilment of the requirements for the award of M.Tech (Biotechnology) at the National Institute of Technology-Rourkela, is an authentic work performed by him under my supervision and guidance. To the best of my knowledge, the matter embodied in the thesis has not been submitted to any University/Institute for the award of any Degree or Diploma.

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ACKNOWLEDGEMENT

I would really like to take this opportunity to thank my research guide, **Prof. Mukesh Kumar Gupta**, Department of Biotechnology and Medical Engineering, NIT Rourkela, for believing in me and allowing me to work on this research and motivating me throughout the time. I am sincerely thankful to **Prof. B. P. Nayak**, and **Prof. S. S. Ray**, Dept. of Biotechnology and Medical Engineering, NIT, Rourkela, for providing the necessary facilities for this work.

I give my special thanks to my labmates **Ms. Srishti Gupta**, **Mr. Iqbal Hussain**, **Mr. Praveen Kumar Guttula**, and **Ms. Tanushree Patra**, and I gladly accept that without their constant guidance, I would never be able to complete this research.

I extend my gratitude and wishes to **Mr.K.Senthilguru PhD Scholar.**, who helped me on this study whenever needed. I thank him for his support and hands for this work. I also extend my wishes to the juniors who worked all along with us for this study.

Finally, I would like to express my heartfelt thanks to my parents for their blessings, my good friends for their support and motivation that put me forward.

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Abstract

The study was aimed at synthesizing a macro-porous scaffolds through ionotropic gelation of sodium alginate and copper sulphate. The synthesized scaffolds were observed with regularly aligned pore channels of diameter about 25 to 40 μ m. Produced scaffolds were further analysed by SEM, EDS, FTIR, and protein adsorption, hemocompatibility for their biocompatibility. EDS results showed the removal of copper from gel scaffolds and hemocompatibility proved the scaffolds are highly biocompatible.

Keywords: ionotropic gelation, macroporous, pore channels, sodium alginate

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